

# HEART SAVER

**Vivien Thomas never went to college. Yet his pioneering research would make him one of the great heroes of medicine.**

**By Lauren Tarshis | Art by Alvin Epps**

**As You Read** > Think about why Vivien Thomas's work was important.

**O**ne-year-old Eileen Saxon was dying. Tiny and weak, she weighed just 9 pounds. Her lips and fingernails were purple, her skin blue. Eileen had been born with a heart condition that starved her body of oxygen.

It was clear that she had little time left.

Eileen's condition was not unique. During the early 1940s, thousands of so-called blue babies were born each year. Most lived no more than a few years. Doctors had no way to help them.

That was about to change.

On November 29, 1944, Eileen was wheeled into an operating room at Johns Hopkins Hospital in Baltimore, Maryland. Doctors and other medical workers watched from a glassed-in gallery above, eager to witness the first-ever attempt at saving a blue baby's life by performing heart surgery. A highly experienced team of doctors, nurses, and other medical staff hovered over Eileen.

When it came to the success of the operation, however, the most important person there was neither a doctor nor a nurse. The lone Black person in the room, he was a soft-spoken man who stood on a step stool looking over the chief surgeon's shoulder. This man, Vivien Thomas, had never been to medical school or even college, but each time the surgeon was ready to make a cut or place a stitch inside Eileen's tiny chest, he would listen for Thomas's instructions.



Today Thomas is considered one of the most important figures in 20th-century medicine. In 1944, however, few medical schools in the U.S. would have accepted him as a student.

In the 1940s, discrimination against Black people was legal throughout the United States. Racist laws and customs kept Black people segregated from White people. Black people were forced to attend separate and inferior public schools. They were regularly turned away from hospitals and barred from sitting in the front of buses. They were forbidden from swimming in public pools and setting foot in public libraries.

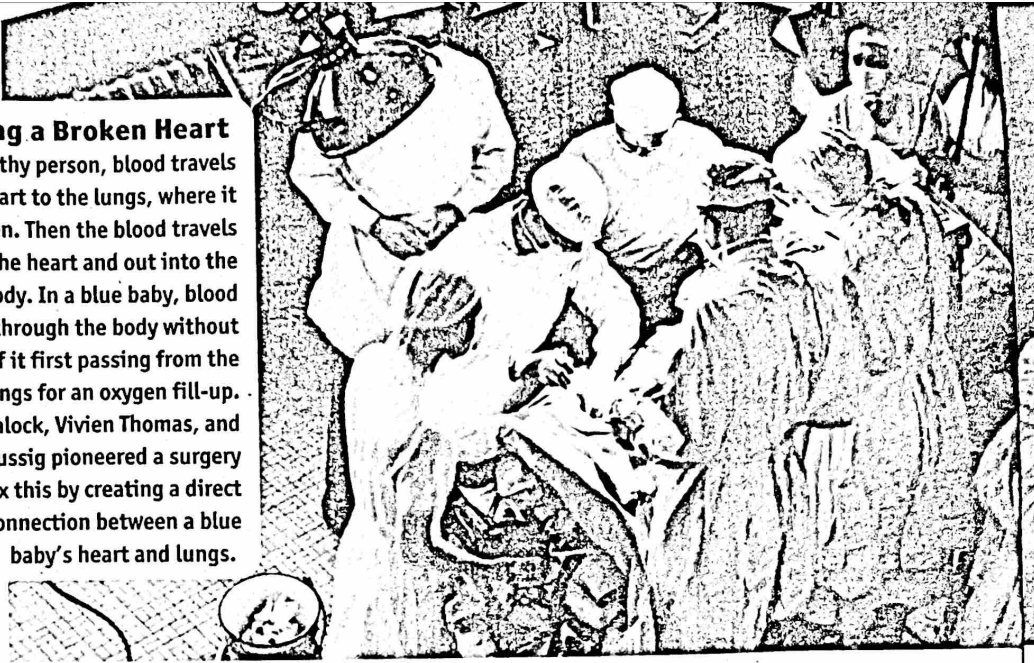
There were some Black doctors, but they were not allowed to work in most hospitals, including Johns Hopkins. Yet in the operating room on that November day, it was Vivien Thomas, a Black man, whose knowledge would make the difference between life and death for baby Eileen.

## Shattered Plans

Thomas grew up in a vibrant Black community in Nashville, Tennessee, a segregated city. He attended a school for Black students that was known for its **rigorous** standards. Thomas graduated with top grades and

### Fixing a Broken Heart

In a healthy person, blood travels through the heart to the lungs, where it receives oxygen. Then the blood travels back through the heart and out into the rest of the body. In a blue baby, blood circulates through the body without enough of it first passing from the heart to the lungs for an oxygen fill-up. Alfred Blalock, Vivien Thomas, and Helen Taussig pioneered a surgery to fix this by creating a direct connection between a blue baby's heart and lungs.



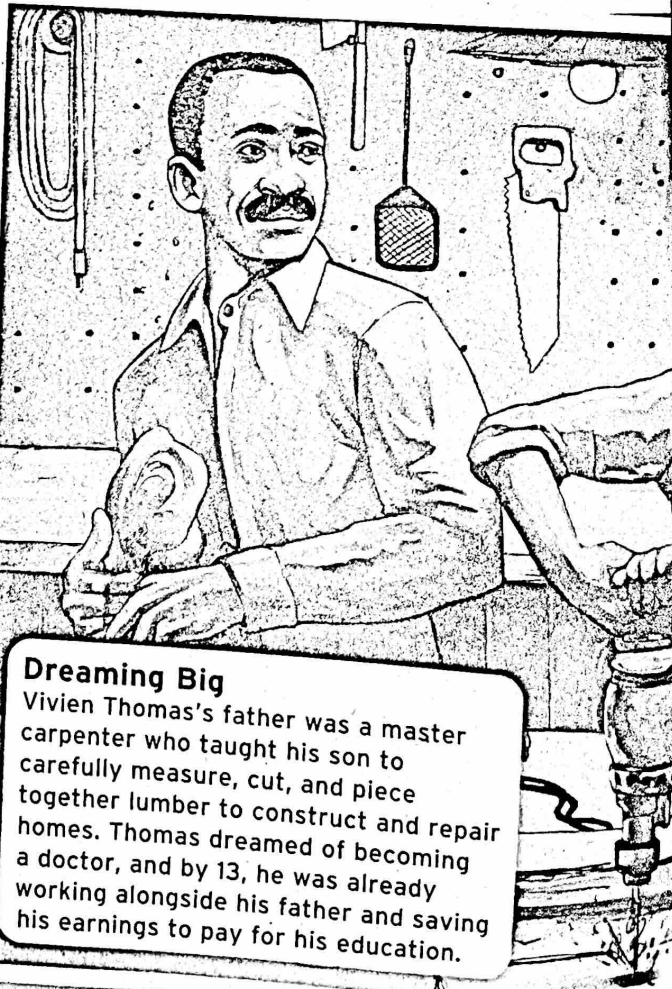
planned to attend college and then medical school. Starting at age 13, he worked afternoons and weekends as a carpenter, saving money for his education.

But not long after his high school graduation in 1930, Thomas's plans were shattered by the Great Depression. The Great Depression

was a period of **economic** disaster that lasted for a decade. Millions of Americans lost their jobs. Banks failed, and as a result, many people, Thomas included, lost their life savings.


With no carpentry work to be found, Thomas was desperate for a job. His search led him to the office

## The Life of a Medical Pioneer



### Dreaming Big

Vivien Thomas's father was a master carpenter who taught his son to carefully measure, cut, and piece together lumber to construct and repair homes. Thomas dreamed of becoming a doctor, and by 13, he was already working alongside his father and saving his earnings to pay for his education.



of a **brash** and brilliant young doctor named Alfred Blalock at Vanderbilt University in Nashville.

Blalock came from a wealthy and prominent White Southern family. At just 32, he was already the head of Vanderbilt's department of surgery. He needed help in his laboratory, where he was studying a condition called shock, which caused many patients to die during surgery.

Thomas was impressed by Blalock's work—but the job paid less than two-thirds of what he had earned as a carpenter. Still, jobs were scarce, and Thomas wanted to start college as soon as possible. He figured he wouldn't be working for Blalock for long.

Little did he know.

## True Partners

Blalock quickly realized Thomas was extraordinarily gifted. He began teaching Thomas about conducting experiments, and Thomas dedicated himself to learning all he could. He worked 16-hour days and often went home with a stack of medical books, which he studied late into the night.

Within a few years, he was designing experiments to test his and Blalock's theories. Amid the bright lights and test tubes of the lab, the doctor and the researcher were true partners. Yet as a Black man, Thomas faced discrimination at Vanderbilt.

After six years in his position, he was still making only a **menial** wage. What's more, he discovered that in Vanderbilt's official records, his job title was janitor. White men with similar jobs were paid more and were called research technicians.

Thomas approached Blalock, told him what he had learned, and said that he should be classified as a research technician and paid like one too. Blalock promised to look into it. And though Thomas never found out if his title changed, his salary soon increased.

## Moving to Maryland

In 1940, after Blalock and Thomas had been working together for a decade, they at last discovered one of the causes of shock and designed an effective treatment. Their discovery was celebrated around the world. Soon, Blalock was invited to become chief of surgery at one of the nation's best hospitals, Johns Hopkins. He accepted the position on one condition: that Thomas could come work with him.

Thomas was married by then and had two young children. With some **reluctance**, he and his



### Forming a Partnership

The first time they met, Alfred Blalock told Thomas he was looking for "someone I can teach to do anything I can do, and maybe do things I can't do." Thomas, then 19, was up to the challenge. Within just a few weeks, he was conducting experiments and performing complex surgeries on animals.

family moved to Maryland. While the change offered him opportunities, it also offered many challenges.

In Maryland, Thomas faced even worse discrimination than he'd left behind. He had a hard time finding a place to live; many landlords there rented only to White people. Johns Hopkins was even more segregated than Vanderbilt. It had separate cafeterias for Black people and White people. And Black patients were made to use a separate entrance in the back.

Thomas was unwilling to let hateful policies like these distract him from his critical work with Blalock, however.

## A Call to Action

At Johns Hopkins, Thomas and Blalock met someone who would change the course of their work—and their lives. Helen Taussig was a

pediatric cardiologist, a doctor who specializes in treating children's and infants' hearts. The first female pediatric cardiologist in the U.S., Taussig had saved many lives. But she could do nothing for blue babies, whose condition prevented sufficient blood from traveling between their heart and lungs. This starved their bodies of oxygen.

In 1943, Taussig asked Blalock and Thomas to develop a procedure that would create a new pathway for blood to travel between the heart and lungs. It was a massive challenge. At the time, heart surgery was considered the "Mount Everest" of medicine—few doctors had even attempted it.

Over many months, while Blalock was busy with other responsibilities, Thomas learned to create blue baby syndrome in animals so he could then

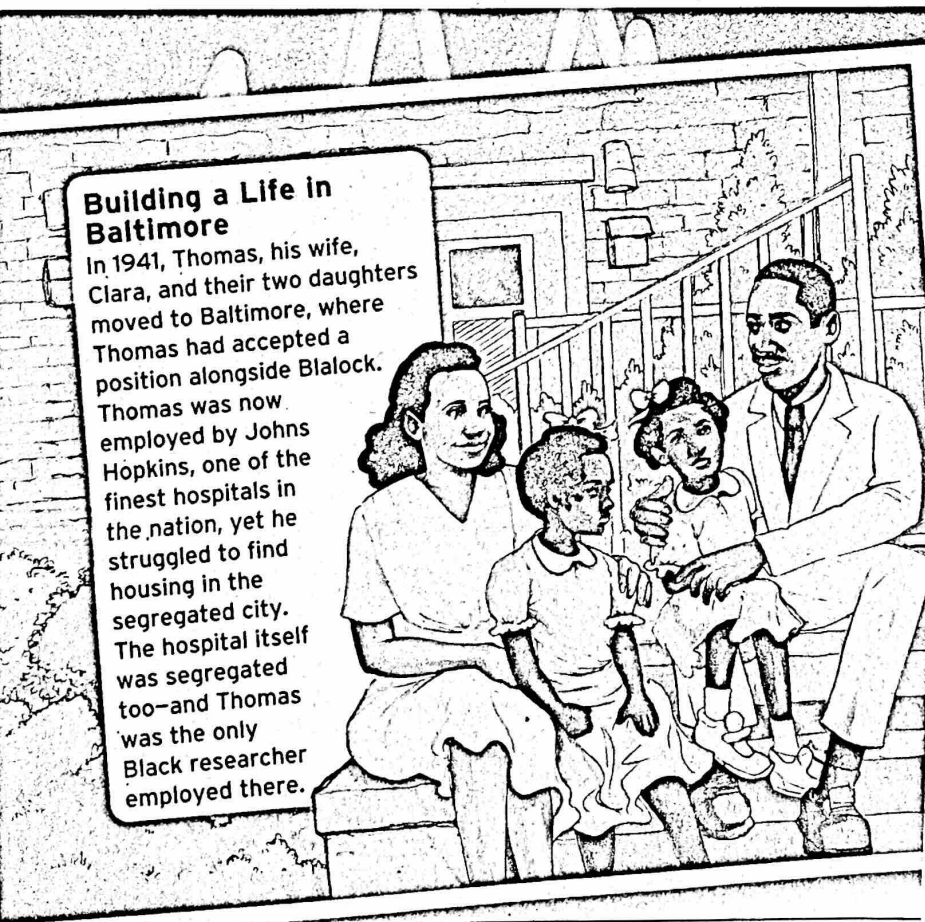
work on treating it. He even designed new medical instruments when he could find none delicate enough for his work.

In late 1944, Blalock received an urgent call from Taussig. A baby was lying in an oxygen tent in the hospital's infant ward. Her name was Eileen Saxon, and she was dying.

By then, Thomas and Blalock had developed the procedure Taussig had asked for. They'd found a way to attach one artery to another, giving the blood a new pathway to the lungs.

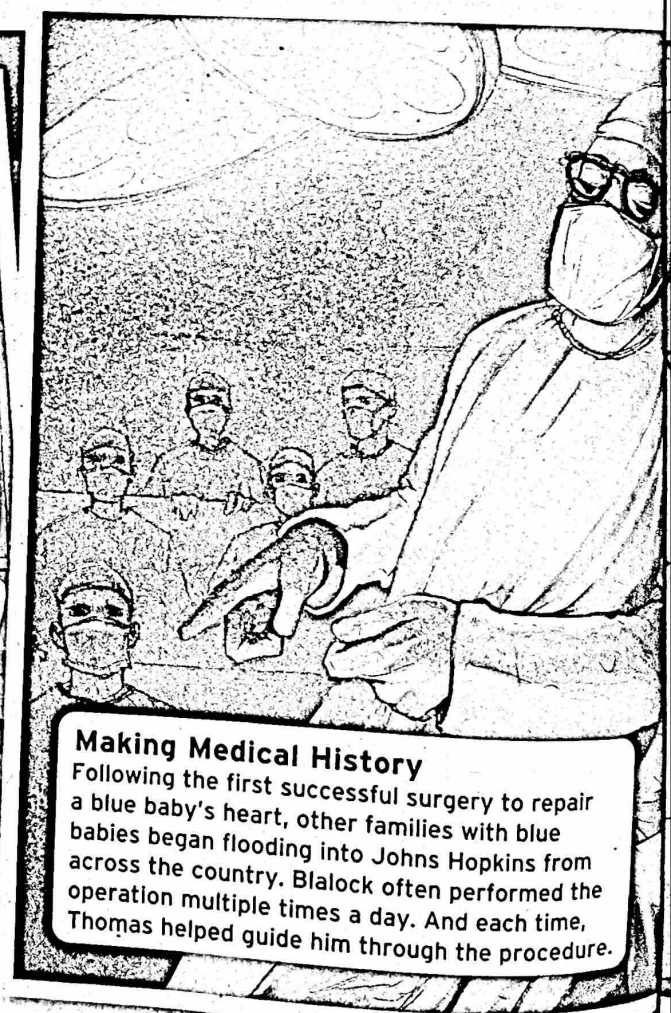
But they had never tried it on a human. Eileen would be the first.

Thomas expected to watch the surgery from the gallery, but Blalock wanted Thomas next to him. Thomas had performed the operation dozens of times on animals. Blalock had done it just once—as Thomas's assistant.

An illustration showing a family of four sitting on a porch. A man in a suit (Thomas) is sitting on the right, talking to a woman (Clara) on the left. Two young girls are sitting between them. The porch has a railing and a door in the background.

### Building a Life in Baltimore

In 1941, Thomas, his wife, Clara, and their two daughters moved to Baltimore, where Thomas had accepted a position alongside Blalock. Thomas was now employed by Johns Hopkins, one of the finest hospitals in the nation, yet he struggled to find housing in the segregated city. The hospital itself was segregated too—and Thomas was the only Black researcher employed there.

An illustration of a surgical team in an operating room. A surgeon in the foreground is wearing a mask and glasses, looking down at a patient on the table. Other team members are visible in the background, also wearing masks and caps.

### Making Medical History

Following the first successful surgery to repair a blue baby's heart, other families with blue babies began flooding into Johns Hopkins from across the country. Blalock often performed the operation multiple times a day. And each time, Thomas helped guide him through the procedure.

Throughout the operation, Blalock asked for Thomas's help. If the surgeon placed a stitch in the wrong direction, Thomas would simply say, "The other direction, Dr. Blalock."

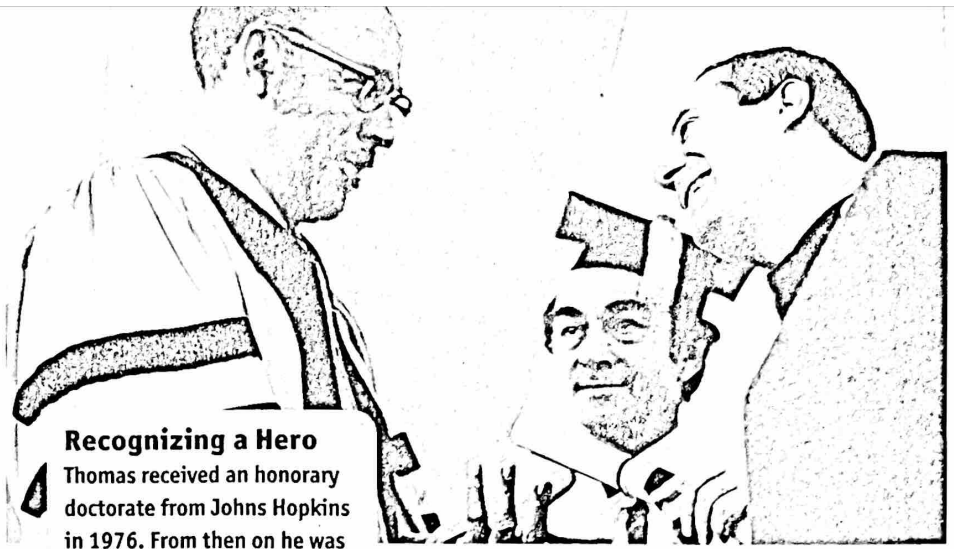
At last, the surgery was nearly complete. Had it worked?

Thomas and Blalock stood practically shoulder to shoulder, their attention fixed on their tiny patient.

The final clamp was removed. Eileen's blood began flowing along its new route from her heart to her lungs. In an instant, her sickly blue skin turned a healthy pink.

"You've never seen anything so **dramatic**," Thomas would later recall. "It was almost a miracle."

Soon, babies were being rushed to Johns Hopkins from across the U.S. Blalock became famous. Thomas continued his work in the background.



### Recognizing a Hero

Thomas received an honorary doctorate from Johns Hopkins in 1976. From then on he was known as "Dr. Thomas."

Blalock died in 1964, but Thomas remained at Johns Hopkins until his retirement in 1979. By then he was a legend at the hospital and a highly respected professor at its medical school. In 1976, Johns Hopkins had finally recognized his contributions, awarding him an honorary doctoral degree 32 years after the first blue baby surgery.

Thomas never became rich or famous, but he blazed a trail for Black Americans in medicine, including his nephew, who entered Johns Hopkins medical school in 1983. Thomas trained two generations of surgeons, and today his portrait hangs across from Blalock's in the medical school.

Thomas died in 1985, but his legacy lives on, beat after beat, in the hearts of the many people he helped save. ●

The Alan Mason Chesney Medical Archives of the Johns Hopkins Medical Institution; Clarion Books (book jacket)



**Supporting the Next Generation**  
It wasn't until nearly two decades after the first blue baby operation that Johns Hopkins accepted its first Black medical students. As the hospital desegregated, Thomas took on the role of mentoring the Black students and doctors who began passing through its doors.



### Writing Contest

Your legacy is how you are remembered and the contributions you make during your life. What is Vivien Thomas's legacy? Entries must be submitted to Heart Saver Contest by a teacher, parent, or legal guardian. \* Three winners will each get a copy of *Breakthrough!* by Jim Murphy.

\*Entries must be written by a student in grades 4-12 and submitted by their teacher, parent, or legal guardian, who will be the entrant and must be a legal resident of the U.S. age 18 or older. See page 2 for details.

